



## Complete Summary

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### TITLE

Pneumonia: percent of patients who had blood cultures performed within 24 hours prior to or 24 hours after hospital arrival for patients who were transferred or admitted to the intensive care unit (ICU) within 24 hours of hospital arrival.

### SOURCE(S)

Specifications manual for national hospital quality measures, version 1.04. Centers for Medicare and Medicaid Services (CMS), Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005 Aug. various p.

### Measure Domain

#### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

#### SECONDARY MEASURE DOMAIN

Does not apply to this measure

### Brief Abstract

#### DESCRIPTION

This measure\* is used to assess the percent of pneumonia patients transferred or admitted to the intensive care unit (ICU) within 24 hours of hospital arrival who had blood cultures performed within 24 hours prior to or 24 hours after hospital arrival.

\*This is a CMS only measure.

#### RATIONALE

Published pneumonia treatment guidelines from American Thoracic Society (ATS)/Infectious Diseases Society of America (IDSA) recommend performance of blood cultures for all inpatients with severe pneumonitis to optimize therapy. Improved survival has been associated with optimal therapy. In addition, the yield

of clinically useful information is greater if the culture is collected before antibiotics are administered. The actual performance of a culture has been added to this measure because restricting measurement to culture collection prior to antibiotics provides an incentive for hospitals not to perform a culture in any patient who has already received antibiotics.

#### PRIMARY CLINICAL COMPONENT

Pneumonia; blood cultures

#### DENOMINATOR DESCRIPTION

Pneumonia intensive care unit (ICU) patients 18 years of age and older (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### NUMERATOR DESCRIPTION

Number of pneumonia patients transferred or admitted to the intensive care unit (ICU) within 24 hours of hospital arrival who had blood cultures performed within 24 hours prior to or 24 hours after arrival at the hospital

### Evidence Supporting the Measure

#### EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Update of practice guidelines for the management of community-acquired pneumonia in immunocompetent adults.](#)

### Evidence Supporting Need for the Measure

#### NEED FOR THE MEASURE

Overall poor quality for the performance measured

#### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

Heffelfinger JD, Dowell SF, Jorgensen JH, Klugman KP, Mabry LR, Musher DM, Plouffe JF, Rakowsky A, Schuchat A, Whitney CG. Management of community-acquired pneumonia in the era of pneumococcal resistance: a report from the Drug-Resistant Streptococcus pneumoniae Therapeutic Working Group. Arch Intern Med 2000 May 22; 160(10): 1399-408. [PubMed](#)

Mandell LA, Bartlett JG, Dowell SF, File TM Jr, Musher DM, Whitney C. Update of practice guidelines for the management of community-acquired pneumonia in immunocompetent adults. Clin Infect Dis 2003 Dec 1; 37(11): 1405-33. [235 references] [PubMed](#)

Mandell LA, Marrie TJ, Grossman RF, Chow AW, Hyland RH. Canadian guidelines for the initial management of community-acquired pneumonia: an evidence-based update by the Canadian Infectious Diseases Society and the Canadian Thoracic Society. The Canadian Community-Acquired Pneumonia Working Group. Clin Infect Dis 2000 Aug; 31(2): 383-421. [PubMed](#)

Metersky ML, Ma A, Bratzler DW, Houck PM. Predicting bacteremia in patients with community-acquired pneumonia. Am J Respir Crit Care Med 2004 Feb 1; 169(3): 342-7. [PubMed](#)

Niederman MS, Mandell LA, Anzueto A, Bass JB, Broughton WA, Campbell GD, Dean N, File T, Fine MJ, Gross PA, Martinez F, Marrie TJ, Plouffe JF, Ramirez J, Sarosi GA, Torres A, Wilson R, Yu VL. Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. Am J Respir Crit Care Med 2001 Jun; 163(7): 1730-54. [PubMed](#)

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Collaborative inter-organizational quality improvement  
Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

#### TARGET POPULATION AGE

Age greater than or equal to 18 years

#### TARGET POPULATION GENDER

Either male or female

#### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

### Characteristics of the Primary Clinical Component

#### INCIDENCE/PREVALENCE

Unspecified

#### ASSOCIATION WITH VULNERABLE POPULATIONS

See "Burden of Illness" field.

#### BURDEN OF ILLNESS

In the United States (U.S.), pneumonia is the sixth most common cause of death. From 1979-1994, the overall rates of death due to pneumonia and influenza increased by 59%. Much of this increase is due to a greater population of persons aged 65 years or older, and a changing epidemiology of pneumonia, including a greater proportion of the population with underlying medical conditions at increased risk of respiratory infection.

#### EVIDENCE FOR BURDEN OF ILLNESS

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2):347-82. [218 references] [PubMed](#)

#### UTILIZATION

Annually, 2-3 million cases of community acquired pneumonia result in 10 million physician visits; 500,000 hospitalizations; and 45,000 deaths.

More than 1.1 million hospitalizations due to pneumonia each year in the U.S.

#### EVIDENCE FOR UTILIZATION

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis 2000 Aug; 31(2): 347-82. [218 references] [PubMed](#)

Niederman MS, Mandell LA, Anzueto A, Bass JB, Broughton WA, Campbell GD, Dean N, File T, Fine MJ, Gross PA, Martinez F, Marrie TJ, Plouffe JF, Ramirez J, Sarosi GA, Torres A, Wilson R, Yu VL. Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. Am J Respir Crit Care Med 2001 Jun; 163(7): 1730-54. [PubMed](#)

## COSTS

Unspecified

### Institute of Medicine National Healthcare Quality Report Categories

## IOM CARE NEED

Getting Better

## IOM DOMAIN

Effectiveness  
Timeliness

### Data Collection for the Measure

## CASE FINDING

Users of care only

## DESCRIPTION OF CASE FINDING

Discharges, 18 years of age and older, with a principal diagnosis of pneumonia or a principal diagnosis of septicemia or respiratory failure (acute or chronic) and an other diagnosis code of pneumonia

## DENOMINATOR SAMPLING FRAME

Patients associated with provider

## DENOMINATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Discharged patients with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code of pneumonia or ICD-9-CM Principal Diagnosis Code of septicemia or respiratory failure (acute or

chronic) and an ICD-9-CM Other Diagnosis Code of pneumonia as defined in Appendix A of the original measure documentation

#### Exclusions

- Patients received in transfer from another acute care or critical access hospital, including another emergency department
- Patients who had no working diagnosis of pneumonia at the time of admission
- Patients receiving Comfort Measures Only
- Patients less than 18 years of age
- Patients not transferred or admitted to the intensive care unit (ICU) within 24 hours of hospital arrival

#### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR INCLUSIONS/EXCLUSIONS

##### Inclusions

Number of pneumonia patients transferred or admitted to the intensive care unit (ICU) within 24 hours of hospital arrival who had blood cultures performed within 24 hours prior to or 24 hours after arrival at the hospital

Exclusions  
None

#### NUMERATOR TIME WINDOW

Fixed time period

#### DATA SOURCE

Administrative and medical records data

#### LEVEL OF DETERMINATION OF QUALITY

Individual Case

#### PRE-EXISTING INSTRUMENT USED

Unspecified

## Computation of the Measure

### SCORING

Rate

### INTERPRETATION OF SCORE

Better quality is associated with a higher score

### ALLOWANCE FOR PATIENT FACTORS

Unspecified

### STANDARD OF COMPARISON

External comparison at a point in time

External comparison of time trends

Internal time comparison

## Evaluation of Measure Properties

### EXTENT OF MEASURE TESTING

Unspecified

## Identifying Information

### ORIGINAL TITLE

PN-3a: blood cultures performed within 24 hours prior to or 24 hours after hospital arrival for patients who were transferred or admitted to the ICU within 24 hours of hospital arrival.

### MEASURE COLLECTION

[National Hospital Quality Measures](#)

### MEASURE SET NAME

[Pneumonia](#)

### SUBMITTER

Centers for Medicare & Medicaid Services

Joint Commission on Accreditation of Healthcare Organizations

### DEVELOPER

Centers for Medicare and Medicaid Services/Joint Commission on Accreditation of Healthcare Organizations

#### ENDORSER

National Quality Forum

#### ADAPTATION

Measure was not adapted from another source.

#### RELEASE DATE

2000 Aug

#### REVISION DATE

2005 Aug

#### MEASURE STATUS

Please note: This measure has been updated. The National Quality Measures Clearinghouse is working to update this summary.

#### SOURCE(S)

Specifications manual for national hospital quality measures, version 1.04. Centers for Medicare and Medicaid Services (CMS), Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 2005 Aug. various p.

#### MEASURE AVAILABILITY

The individual measure, "PN-3a: Blood Cultures Performed Within 24 Hours Prior to or 24 Hours After Hospital Arrival for Patients Who were Transferred or Admitted to the ICU Within 24 Hours of Hospital Arrival," is published in "Specifications Manual for National Hospital Quality Measures." This document is available from the [Joint Commission on Accreditation of Healthcare Organizations \(JCAHO\) Web site](#). Information is also available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#). Check the JCAHO Web site and CMS Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

#### COMPANION DOCUMENTS

The following are available:

- A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also



available. For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).

- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A comprehensive review of development and testing for national implementation of hospital core measures. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 40 p. This document is available from the [JCAHO Web site](#).
- Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Attributes of core performance measures and associated evaluation criteria. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations (JCAHO); 5 p. This document is available from the [JCAHO Web site](#).

#### NQMC STATUS

This NQMC summary was completed by ECRI on January 6, 2003. The information was verified by the Centers for Medicare/Medicaid Services on March 14, 2003. This NQMC summary was updated by ECRI on October 24, 2005. The information was verified by the measure developer on December 7, 2005.

#### COPYRIGHT STATEMENT

The Specifications Manual for National Hospital Quality Measures [Version 1.04, August, 2005] is the collaborative work of the Centers for Medicare & Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations. The Specifications Manual is periodically updated by the Centers for Medicare & Medicaid Services and the Joint Commission on Accreditation of Healthcare Organizations. Users of the Specifications Manual for National Hospital Quality Measures should periodically verify that the most up-to-date version is being utilized.

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